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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,821	08/29/2003	Gaetan L. Mathieu	P116D1-US	9378

7590

12/10/2004

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EXAMINER

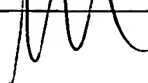
CHANG, RICK KILTAE

ART UNIT PAPER NUMBER

3729

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/651,821	Applicant(s) MATHIEU ET AL. 	
	Examiner Rick K. Chang	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 31-33 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-30 and 34-37 is/are allowed.
- 6) ☒ Claim(s) 38-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 38 is rejected under 35 U.S.C. 102(b) as being anticipated by Farnworth et al (US 5,495,667).

Farnworth discloses in Figs. 1A-1E show forming interconnection element and Figs. 3A-3B transforming a property of 24B by element 28, and Fig. 6C shows coupling to a second substrate 70.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 39-41 rejected under 35 U.S.C. 103(a) as being unpatentable over Farnworth et al (US 5,495,667) in view of Smith et al (US 5,613,861).

Farnworth fails to disclose forming a plurality of interconnection elements coupled to corresponding contact nodes on the first substrate and coupling the interconnection element comprises coupling the plurality of interconnection elements to corresponding contact nodes on the second substrate; bringing the free ends of the plurality of interconnection elements together

with corresponding contact nodes with a sufficient contact force to make a pressure connection; first interconnection elements coupled to corresponding first contact nodes on a first surface of the first substrate and second interconnection elements coupled to corresponding second contact nodes on a second surface of the first substrate, wherein the first interconnection elements are coupled to the contact nodes on the second substrate; coupling the second interconnection elements to corresponding contact nodes of a third substrate in an interposer application; testing the second substrate; the second substrate is a circuit board; the contact nodes of the second substrate comprise external connection points, coupling the external connection points of the second substrate to corresponding contact nodes of a third substrate; coupling comprises a temporary connection to the second substrate; coupling comprises a permanent connection to the second substrate; coupling comprises soldering the free ends of the interconnection elements to the corresponding contact nodes of the second substrate; the second substrate is part of a system; and the system comprises one of an integrated circuit test system and a substrate system.

Smith discloses forming a plurality of interconnection elements coupled to corresponding contact nodes on the first substrate and coupling the interconnection element comprises coupling the plurality of interconnection elements to corresponding contact nodes on the second substrate; bringing the free ends of the plurality of interconnection elements together with corresponding contact nodes with a sufficient contact force to make a pressure connection; first interconnection elements coupled to corresponding first contact nodes on a first surface of the first substrate and second interconnection elements coupled to corresponding second contact nodes on a second surface of the first substrate, wherein the first interconnection elements are coupled to the contact nodes on the second substrate; coupling the second interconnection elements to corresponding

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contact nodes of a third substrate in an interposer application; testing the second substrate; the second substrate is a circuit board; the contact nodes of the second substrate comprise external connection points, coupling the external connection points of the second substrate to corresponding contact nodes of a third substrate; coupling comprises a temporary connection to the second substrate; coupling comprises a permanent connection to the second substrate; coupling comprises soldering the free ends of the interconnection elements to the corresponding contact nodes of the second substrate; the second substrate is part of a system; and the system comprises one of an integrated circuit test system and a substrate system (see Figs. 1-6, 16 and 25-30 and corresponding sections of the written description in the Smith patent).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Farnworth by forming a plurality of interconnection elements coupled to corresponding contact nodes on the first substrate and coupling the interconnection element comprises coupling the plurality of interconnection elements to corresponding contact nodes on the second substrate; bringing the free ends of the plurality of interconnection elements together with corresponding contact nodes with a sufficient contact force to make a pressure connection; first interconnection elements coupled to corresponding first contact nodes on a first surface of the first substrate and second interconnection elements coupled to corresponding second contact nodes on a second surface of the first substrate, wherein the first interconnection elements are coupled to the contact nodes on the second substrate; coupling the second interconnection elements to corresponding contact nodes of a third substrate in an interposer application; testing the second substrate; the second substrate is a circuit board; the contact nodes of the second substrate comprise external connection points, coupling the external connection points of the

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second substrate to corresponding contact nodes of a third substrate; coupling comprises a temporary connection to the second substrate; coupling comprises a permanent connection to the second substrate; coupling comprises soldering the free ends of the interconnection elements to the corresponding contact nodes of the second substrate; the second substrate is part of a system; and the system comprises one of an integrated circuit test system and a substrate system, as taught by Smith, for the purpose of electrically interconnecting different electrical devices for testing.

Allowable Subject Matter

5. Claims 19-30 and 34-37 are allowed.

Response to Arguments

6. Applicant's arguments filed 11/15/04 have been fully considered but they are not persuasive.

Farnworth discloses in col. 5, lines 44-55 that the laser 28 softens (change the property of the wire) the wire material into the desired shape (a ball).

Interviews After Final

7. **Applicant note that an interview after a final rejection must be submitted briefly in writing the intended purpose and content of the interview (the agenda of the interview must be in writing). Upon review of the agenda, the Examiner may grant the interview if the examiner is convinced that disposal or clarification for appeal may be accomplished with only nominal further consideration. Interviews merely to restate arguments of record or to discuss new limitations will be denied. See MPEP 714.13 and 713.09.**

Conclusion

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8. Please provide reference numerals (either in parentheses next to the claimed limitation or in a table format with one column listing the claimed limitation and another column listing corresponding reference numerals in the remark section of the response to the Office Action) to all the claimed limitations as well as support in the disclosure for better clarity (optional). Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick K. Chang whose telephone number is (571) 272-4564. The examiner can normally be reached on 5:30 AM to 1:30 PM, Monday through Thursday.

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The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.


RICHARD CHANG
PRIMARY EXAMINER

RC
December 8, 2004